

**REMARKS**

Claims 1-17, 19, 21, and 22 are pending. Claims 1, 12, 15, and 19 are amended. Claims 18 and 20 are canceled. Claims 21 and 22 are added. Reconsideration of the claims is respectfully requested in view of the following remarks.

**I. 35 U.S.C. § 112, Second Paragraph, Alleged Indefiniteness of Claims 1-20**

The Office rejects claims 1-20 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicants regard as the invention.

More particularly, the Office Action alleges that the term “active entity” in claim 1 is indefinite, because Applicants intend the term to mean “human being or legal entity,” while the accepted meaning is “an object that performs an action.” Claim 1, as well as independent claims 12 and 15, is amended to recite “wherein each of the active entities is a human being or legal entity.” Therefore, claims 1-3 and 12-20 are amended to particularly point out and distinctly claim the subject matter that Applicants regard as the invention.

With respect to claim 5, the Office Action alleges that claim 5 is indefinite because the claim recites a “potential” and fails to identify the specific steps in which an information process could be improved. Applicants respectfully disagree. As pointed out in the Office Action, claim 5 recites “identifying at least one way in which said information-handling process could be improved.” The claim does not recite a way in which information-handling processes could potentially be improved; rather, claim 5 recites **identifying** a way in which information-handling processes could be improved. That is, claim 5 does not recite a potential, but recites **identifying** a potential. The claim need not recite each and every “potential” for the scope of the identifying step to be definite. This is an issue of breadth, not definiteness.

Claims 4 and 6-11 are not addressed in the body of the rejection. Applicants submit that these claims were included in the statement of the rejection by mistake.

Therefore, Applicants respectfully request withdrawal of the rejection of claims 1-20 under 35 U.S.C. § 112, second paragraph.

**II. 35 U.S.C. § 103, Alleged Obviousness of Claims 1-20**

The Office Action rejects claims 1-20 under 35 U.S.C. 103(a) as being allegedly unpatentable over Martin, "Principles of Object Oriented Analysis and Design," Prentice Hall, 1993. Applicants note that the statement of the rejection does not mention Birnbaum (presumably U.S. Patent No. 5,797,128); however, the body of the rejection of claims 1-3 and 12-20 relies heavily on the teachings of Birnbaum. Applicants assume that the Examiner mistakenly omitted Birnbaum from the statement of the rejection. However, Birnbaum is not relied upon in the body of the rejection of claims 4-11. Therefore, presumably, claims 4-11 are only rejected as allegedly being unpatentable over Martin. Yet, the Office Action states that claim 10 is rejected for the same reasons as claim 2 and claim 11 is rejected for the same reasons as claim 3. Thus, even though all claims are listed in the same statement of rejection, the same references are not applied to all of the listed claims.

To further advance prosecution, Applicants presume that claims 1-3 and 10-20 are rejected as allegedly being unpatentable over Martin in view of Birnbaum and that claims 4-9 are rejected as allegedly being unpatentable over Birnbaum alone.

**IIA. 35 U.S.C. § 103, Alleged Obviousness of Claims 4-9**

The Office Action presumably rejects claims 4-9 under 35 U.S.C. 103(a) as being allegedly unpatentable over Martin, "Principles of Object Oriented Analysis and Design," Prentice Hall, 1993. This rejection is respectfully traversed.

Independent claim 4 recites a particular method in which an initial assessment of an information-handling process is performed, a model of the information-handling process is constructed based on the initial assessment, and output is provided based on the initial assessment and constructing, that identifies at least one way in which personally identifiable information could be better handled. The Office Action alleges that Martin teaches providing output, based on an initial assessment, and constructing a model of an information handling process, which identifies at least one way in which personally identifiable information may be better handled simply because Martin teaches the use of CRC cards at pages 187-190.

Martin mentions the use of CRC cards, which are physical index cards used by programmers to represent classes in an object oriented model, and the desire of programmers to “think like an object.” Nowhere in Martin is there any teaching or suggestion of a methodology in a data processing system for analyzing an information handling process, constructing a model of the information handling process, or generating an output that identifies at least one way in which personally identifiable information can be better handled by the information handling process, as recited in claim 4. To the contrary, Martin merely describes, in general, a manual, index card based technique by which programmers may try to gain some insight into how the classes and objects of an object oriented model may operate. Martin does not teach anything regarding personally identifiable information, handling personally identifiable information, or performing an assessment, constructing a model, or determining an improvement to a personally identifiable information handling process.

Moreover, nowhere in Martin is there any teaching or suggestion regarding representing entities, data, and rules in an information handling process by using a limited number of object classes, representing operations performed on data by using a limited number of privacy-related actions, and representing transactions by using the limited number of object classes and the limited number of privacy-related actions. The Office Action alleges that these features are taught by Martin at page 19, 140, 146-147, 156, and 166. Page 19 of Martin merely teaches that “operations” are used to read or manipulate data of an object. Page 19 does not teach anything regarding privacy-related actions or representing transactions using such privacy related actions. Page 140 of Martin merely teaches WHEN-IF-THEN trigger rules. Nowhere on page 140 is there any teaching or suggestion regarding privacy related actions or using privacy related actions along with objects representing entities, data, and rules to represent transactions.

Pages 146-147 of Martin have been addressed above with regard to claim 1. These pages of Martin merely provide example diagrams of rules linked to object oriented CASE diagrams. Nowhere in any of the diagrams provided on pages 146-147 is there any teaching or suggestion regarding representing objects performed on data as a limited number of privacy-related actions or using such privacy-related actions along with objects representing entities, data and rules to represent transactions.

Similarly, pages 156 and 166 of Martin do not provide any teaching or suggestion regarding these features. Page 156 of Martin provides an example object-relationship model for students and classes. Again, there is no teaching or suggestion regarding representing objects performed on data as a limited number of privacy-related actions or using such privacy-related actions along with objects representing entities, data, and rules to represent transactions. Page 166 of Martin provides an event diagram example, which, again, has nothing to do with these features of claim 4. While Martin provides teachings regarding some basic building blocks of object oriented environments, Martin does not provide any of the specific features recited in claim 4.

In view of the above, Applicants respectfully submit that Martin does not teach or suggest the features recited in claim 4. At least by virtue of their dependency on claim 4, dependent claims 5-9 are not rendered obvious by Martin.

With regard to dependent claim 5, Martin does not teach providing output comprises identifying at least one way in which an information handling process can be improved. The Office Action alleges that this feature is taught by Martin at pages 187-190, because Martin teaches using CRC cards to gain a better understanding of how to handle the object model. The use of CRC cards is addressed above with regard to claim 4. Using CRC cards, which, again, are physical index cards that a programmer may use as a tool to understand how objects work with each other, does not provide any output that identifies at least one way in which an information handling process can be improved. A human being, using physical cards, does not constitute a data processing system that provides an output. Thus, the whole premise of the rejections based on the use of CRC cards is fatally flawed. Nowhere in the Martin reference is there any teaching or suggestion to automate CRC cards such that a data processing system uses such CRC cards to generate an output that identifies a way in which an information handling process can be improved. While CRC cards may be a nice tool for programmers to use, it does not obviate the features of claim 5. Thus, in view of the above, Applicants respectfully submit that Martin does not teach or suggest the features of claim 5.

The Office uses the same flawed reasoning in rejecting claims 6, 7, and 9. Claim 6 recites that providing output further comprises identifying at least one way to improve

compliance with a law or contract. Just as CRC cards do not teach or suggest providing an output that comprises at least one way in which an information handling process can be improved (claim 5), CRC cards do not provide any teaching or suggestion regarding providing an output that identifies a way to improve compliance with a law or contract.

Claims 7 and 9 are rejected "for the same reasons as claim 5." Claim 7 recites enforcing compliance with a law or contract. This feature is not taught or suggested by the use of CRC cards. Claim 9 recites that designing a modification further comprises designing a modification to improve compliance with a law or contract governing an information handling process. Again, using CRC cards does not teach or suggest designing a modification that improves compliance with a law or contract governing an information handling process. Thus, in view of the above, Applicants respectfully submit that Martin does not teach or suggest the features in claims 5, 6, 7, and 9.

Regarding claim 8, Martin does not teach or suggest designing a modification to an information handling process based on constructing a model and providing output that identifies at least one way in which personally identifiable information could be better handled. The Office Action alleges that this feature is taught by Martin because Martin supposedly teaches that "modifications are constantly being designed in the creation of the object oriented model of the system from the creation of the model, to the creation of its design, to the generation of the code" at page 60. All this teaches is that the object oriented model may undergo many modifications. Where does this teach anything regarding devising a modification based on constructing the model and providing an output that identifies at least one way in which personally identifiable information could be handled? Once again, the Office takes a general statement in Martin and alleges that this general statement teaches a very specific feature recited in the claims without any support whatsoever.

Applicants agree that object oriented models do undergo many modifications during their creation. This is not what Applicants are claiming. Rather, Applicants are specifically claiming the designing of a modification to an information handling process based on constructing a model and providing output that identifies at least one way in which personally identifiable information could be better handled. Such a feature is not taught or suggested by merely stating that object models undergo many



modifications. Thus, in view of the above, Applicants respectfully submit that Martin does not teach or suggest the features of claim 8.

Therefore, Applicants respectfully request withdrawal of the rejection of claims 4-9 under 35 U.S.C. § 103.

**II.B. 35 U.S.C. § 103, Alleged Obviousness of Claims 1-3 and 10-20**

The Office Action presumably rejects claims 1-3 and 10-20 under 35 U.S.C. 103(a) as being allegedly unpatentable over Martin, "Principles of Object Oriented Analysis and Design," Prentice Hall, 1993, in view of Birnbaum (U.S. Patent No. 5,797,128). This rejection is respectfully traversed.

Claim 1 reads as follows:

1. A method, in a data processing system, for handling personally identifiable information, said method comprising:
  - providing, in a computer, a first set of object classes representing active entities in an information-handling process, wherein a limited number of privacy-related actions represent operations performed on data and wherein each of the active entities is a human being or legal entity;
  - providing, in said computer, a second set of object classes representing data and rules in said information-handling process, wherein at least one object class has said rules associated with said data, and wherein said data represents said personally identifiable information; and
  - processing transactions, in the data processing system, involving said personally identifiable information, using said computer and said first and second set of object classes, so as to enforce a privacy policy, associated with the personally identifiable information and defined by said rules, against one or more active entities represented by said first set of object classes, wherein each of the one or more active entities represented by said first set of object classes is a human being or legal entity, wherein:
    - a first active entity represented by a first object class in said first set of object classes is a first data user that requests said personally identifiable information from a data subject that is a second active entity represented by a second object class in said first set of object classes,
    - said data subject is an active entity that is personally identifiable by said personally identifiable information;
    - a third active entity represented by a third object class in said first set of object classes is a second data user that requests personally identifiable information from said first data user, and
    - said rules define if and how said personally identifiable information may be provided, by said first data user, to said second data user. [emphasis added]

Martin does not teach or suggest every element of the claimed invention. Specifically, Martin does not teach or suggest a first set of object classes representing active entities in an information handling process, a second set of object classes representing data and rules in an information handling process, or processing transactions involving personally identifiable information so as to enforce a privacy policy associated with the personally identifiable information and defined by rules of the second set of object classes, against one or more active entities represented by the first set of object classes, as recited in claim 1.

Martin is a textbook that is concerned with describing the basic building blocks of object-oriented modeling. As such, Martin generally teaches objects, classes, rules, and the like. However, Martin does not provide any teaching or suggestion regarding the specific arrangement of objects, classes, and rules, or the processing of transactions using such arrangement of objects, classes, and rules so as to enforce a privacy policy, associated with personally identifiable information and defined by rules in a set of object classes, against one or more active entities represented by a first set of object classes. Nowhere in Martin is there any teaching or suggestion regarding a first set of object classes representing active entities in an information handling process. Nowhere in Martin is there any teaching or suggestion regarding a second set of object classes representing data and rules in an information handling process. Nowhere in Martin is there any teaching or suggestion to process transactions involving personally identifiable information so as to enforce a privacy policy associated with the personally identifiable information and defined by rules of the second set of object classes, against one or more active entities represented by the first set of object classes.

The Office Action alleges that Martin teaches the feature of “providing, in a computer, a first set of object classes representing active entities in an information-handling process, wherein a limited number of privacy-related actions represent operations performed on data” at page 19, because, in the Examiner’s opinion, the objects are active entities themselves and that privacy related actions are the operations to read and manipulate data of the object. The Examiner explains that “...it is the Examiner’s position that an object as disclosed by Martin, in the field of Object oriented program, inherently discloses an active entity.”

Claim 1 recites "wherein each of the active entities is a human being or legal entity." Thus, an "active entity" shall be limited to human beings or legal entities. Claim 1 recites that the first set of object classes represents active entities "in an information-handling process"; thus, this feature is to be interpreted as a first set of object classes representing human beings or legal entities in an information-handling process. Therefore, the first set of object classes do not refer to any object that is involved in information handling, as the Examiner alleges. To the contrary, the first set of object classes specifically represents human beings or legal entities, i.e. active entities, in an information-handling process. An example of such human beings or legal entities is given on page 10, line 28, to page 11, line 1, of the present specification where it states that the "main actors in EPA are a data subject 301 (i.e. the person who is described by the PII) and one or more data users, 303 or 304 (e.g. different organizations or individuals)." Thus, the general objects described in Martin do not teach or suggest using a first set of object classes to represent human beings or legal entities, i.e. active entities, in an information-handling process.

In addition to the above, Martin does not teach or suggest a second set of object classes representing data and rules in said information-handling process, wherein at least one object class has said rules associated with said data, and wherein said data represents said personally identifiable information. The Office Action alleges that this feature is taught by Martin at page 144 in the section entitled "Object Structure Analysis/Object Behavior Analysis" because this section allegedly states that objects are capable of representing data and rules in their interrelationships with other objects. While it may be true that objects are capable of representing data and rules, there is nothing in such a general teaching that teaches or suggests using object classes to represent personally identifiable information in association with rules, as recited in claim 1. Nowhere in Martin is there any mention of using objects to represent personally identifiable information in association with rules in an information handling process. Moreover, there is no teaching or suggestion in Martin to use a first set of object classes representing active entities in an information handling process and use a second set of object classes representing personally identifiable information and rules in an information handling process.



Further to the above, Martin does not teach or suggest processing transactions involving personally identifiable information using the first set of object classes and the second set of object classes so as to enforce a privacy policy, associated with the personally identifiable information and defined by the rules, against one or more active entities represented by the first set of object classes. The Office Action alleges that Martin teaches processing transactions involving personally identifiable information using a first set of object classes and a second set of object classes in the diagrams on pages 146-147 of Martin. Specifically, the Office Action alleges that the identities of the customers, their salaries, employee types, etc. are personally identifiable information. While these may be examples of personally identifiable information, there is no teaching or suggestion in the diagrams on pages 146-147 of Martin to enforce a privacy policy associated with personally identifiable information, represented in a second set of object classes, against one or human beings or legal entities represented by a first set of object classes. The diagrams shown on pages 146-147 of Martin have nothing to do with a privacy policy, let alone a privacy policy that is defined by rules in a second set of object classes, associated with personally identifiable information in the second set of object classes, which is applied against a first set of object classes that represent human beings or legal entities in an information handling process.

The Office Action acknowledges that Martin does not teach a first and second set of object classes that enforce a privacy policy. The Office Action alleges that Birnbaum teaches that policies are defined to be rules for the values of the attributes of managed objects. Claim 1 is amended to incorporate the features previously presented in claim 18. Thus, in claim 1 there is a data subject that is personally identifiable by the personally identifiable information, a first data user that requests the personally identifiable information from the data subject, a second data user that requests the personally identifiable information from the first data user, and rules that govern if and how the personally identifiable information may be provided by the first data user to the second data user. None of these features is taught or suggested by Martin or Birnbaum.

The Office Action alleges that these features are taught by Martin in Figure 11.13 and its corresponding description. Specifically, the Office Action states that a first active entity is a student represented by a person object that requests personally identifiable

information from a data subject, wherein the personally identifiable information is a registration. Conspicuously missing from the Examiner's explanation of how Figure 11.13 supposedly teaches all of the features of previously presented claim 18 is any explanation of where in the figure the second data user is represented. That is because Figure 11.13 has nothing to do with the features of previously presented claim 18 and the Examiner is attempting to force Figure 11.13 to fit the mold of claim 18 (now claim 1) using hindsight.

Nowhere in Figure 11.13 or its corresponding description is there any teaching or suggestion regarding one data user requesting information from another data user about a data subject where rules govern if and how the information may be provided by the first data user to the second data user. The Examiner points to a seemingly arbitrary and irrelevant portion of the Martin reference. Figure 11.13 is actually an event diagram illustrating a registration event in which a student registers, a dormitory room is obtained, and the student is invoiced. This has nothing to do with the features of previously presented claim, which are now recited in claim 1.

Independent claims 12 and 15, as amended, provide system and computer-usable medium claims having features that are similar to those discussed above with regard to claim 1. Therefore, these claims are distinguished over Martin and Birnbaum for similar reasons as set forth above with regard to claim 1.

In view of the above, Applicants respectfully submit that Martin and Birnbaum, taken alone or in combination, do not teach or suggest the features recited in claims 1, 12, and 15. At least by virtue of their dependency on claim 4, dependent claims 2-3, 13-14, and 16-20 are not rendered obvious by Martin and Birnbaum.

The rejection of the dependent claims is respectfully traversed for at least the same reasons set forth above with regard to claims 1, 12 and 15, from which claims 3, 14 and 17 depend, respectively. In addition, Applicants respectfully traverse the Examiner's taking of Official Notice that representing rules as a filled paper form, including both collected data and rules regarding said collected data, was well known in the art at the time of the invention. While electronic forms may have been generally known, associating rules with data collected by such electronic forms in said electronic forms,

specifically as recited in combination in claims 3, 14, and 17, was not known prior to Applicants' claimed invention.

In response to this argument, the Examiner states that examples of an object class representing a filled paper form including both collected data and rules regarding the collected data include contracts signed by parties. The Examiner states that a common example of this feature is a legal contract, such as the contract for sale of a house, which involves the collection of data and would thereby form the set of rules to apply to the collected data. Applicants respectfully disagree.

While these examples that the Examiner provides are all good examples of paper forms, they are not object classes that represent a filled paper form having collected data and rules regarding the collected data. Nowhere in the example of a paper contract is there any teaching or suggestion to represent such a paper contract as at least one object class having collected data and rules regarding collected data.

Moreover, the Examiner's allegation that the legal contract includes collected data and rules regarding the collected data is simply incorrect. While legal contracts do have information that is filled into them, the content of the contract does not regard the information that is filled in, but rules to be applied to the subject of the contract. For example, inserting the address of the house that is the subject of the sale does not mean that the "rules" in the contract apply to the address information that was entered. To the contrary, the rules in the contract apply to the parties involved in the sale. Nowhere in the sale contract is there any rule regarding how the information filled into the contract may be used. Thus, the Examiner's allegation is completely without merit.

Moreover, even if electronic forms having collected data and associated rules were known prior to Applicants' invention, there is no teaching or suggestion to include such a feature in the mechanisms of Martin and/or Birnbaum. As discussed previously, Martin is merely a general textbook describing the basic building blocks of object-oriented models. Martin does not provide any teaching or suggestion of any problem for which electronic forms having collected data and associated rules would be a solution. The only basis for asserting such a combination is a hindsight reconstruction of Applicants' claimed invention using Applicants' own disclosure to provide the suggestion for making the combination. Such a combination, predicated on knowledge of

Applicants' claimed invention, is impermissible as a basis for establishing a *prima facie* case of obviousness.

Furthermore, even if such a combination were possible and there were a suggestion in Martin or Birnbaum to include such electronic forms with collected data and associated rules, the result still would not be the invention as recited in claims 3, 14 and 17. As discussed above, Martin and Birnbaum do not provide any teaching or suggestion regarding the features of independent claims 1, 12, and 15. The inclusion of an electronic form with collected data and associated rules would not provide for this deficiency in Martin, as combined with Birnbaum. Thus, the combination still would not result in the invention as recited in claims 3, 14, and 17. In view of the above, Applicants respectfully submit that Martin and Birnbaum, taken individually or in combination, do not teach or suggest the features recited in dependent claims 3, 14, and 17.

Dependent claims 19, 21, and 22 recite transforming, based on the rules, personally identifiable information into a depersonalized format prior to providing the personally identifiable information to the second data user. The Office Action alleges that this feature is taught by Martin at page 166. The Office Action alleges that the registration information is a depersonalized format, but is specific to a particular student when a student makes the registration. Applicants respectfully disagree.

As set forth in the present specification on page 13, lines 6-9, depersonalized data is personally identifiable information where the link to the data subject is not visible and cannot be established without knowing some additional information. A registration of a student is not depersonalized information. To the contrary, the registration requires that the student be identifiable from the information. Thus, the Examiner's allegations in the Office Action are simply incorrect. Once again, the Examiner randomly selects portions of the Martin reference and attempts to force them into the mold of the present claims regardless of the fact that they simply do not have anything to do with the present claims. Nowhere in Martin, or Birnbaum, is there any teaching or suggestion to transform personally identifiable information into a depersonalized format prior to providing the personally identifiable information to a second data user. In view of the above, Applicants respectfully submit that Martin and Birnbaum, taken alone or in combination,

do not teach or suggest the features of dependent claim 19, or those of new claims 21 and 22.

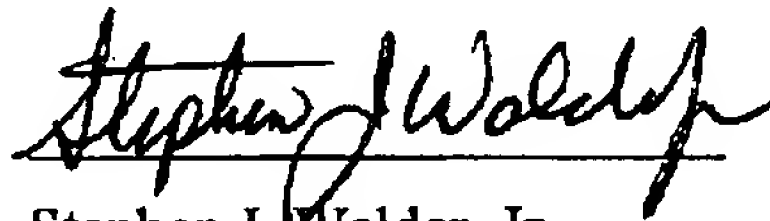
Therefore, Applicants respectfully request withdrawal of the rejection of claims 1-3, 10-17, and 19 under 35 U.S.C. § 103.

### **III. Conclusion**

It is respectfully urged that the subject application is now in condition for allowance. The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

Respectfully submitted,

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